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## ABSTRACT

The first of seven monographs on adults with learning disabilities (LD), the document focuses on the evidences of LD in adults. Difficulties in adjustment after school are noted and exemplified in a case study. Case studies are also cited to show the evidence of LD in cognitive processes, academics, and behavior, and to demonstrate the interrelationships among areas of learning. Deficiencies identified in research are listed for the areas of oral language, thinking and reasoning, interpersonal relationships, behavior, reading, mathematics, and written language. The definition of LD adopted by the Association for Children and Adults with Learning Disabilities is presented and explained. A glossary of approximately 50 terms concludes the booklet. (CL)

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Academic Assessment and Remediation  
of Adults with Learning Disabilities:

A Resource Series for Adult Basic Education Teachers

DESCRIPTION AND DEFINITION OF LEARNING DISABILITIES

Five County Adult Education Program  
(Barrow, Clarke, Jackson, Oconee, and Oglethorpe Counties)  
Clarke County Board of Education  
Athens, Georgia 30601

1984

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## PREFACE

All adults who have not completed high school are potential clients for our Adult General Education Program and are aggressively recruited. Most of them with motivation proceed normally through our instructional program until they reach their goal. While following the progress of our students, we observed that some of them made slower progress and gained lower than expected achievement levels. These students did not reach their goal or our goal for them, although many had good motivation, seemed alert and bright, and occasionally made excellent progress in one or more skills. An awareness grew that a significant number of the students might be learning disabled.

Assistance was at hand from the University of Georgia, Department of Special Education, in the persons of Dr. Cheri Hoy and Dr. Noel Gregg, who met with the staff of the project for planning, worked with our adult education teachers in workshops, as well as wrote our project publications. Our appreciation is also expressed to the teachers of the five-county program for their participation, to Mrs. Betty Westbrook, Athens, for her extra-hours typing of the manuscripts, to Ms. Shelby Johnson, Snellville, for editorial assistance, and to Dr. Edward T. Brown, Stone Mountain, for facilitating the development and production processes.

Dr. Janie Rodgers  
Project Director

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## LEARNING DISABILITIES AND ADULTHOOD

Learning disabilities is a term used to describe individuals who have difficulty acquiring, storing, and/or retrieving information because of a deficit or inefficiency in their cognitive processing system. These individuals have adequate sight, hearing, and motor skills; they have average or better intelligence; and typically, they are normal in appearance. Their difficulty in learning is not the result of emotional blocks or problems, or a disadvantaged environment; they are not slow learners. Learning disabled adults are characterized only by major discrepancies between their potential for learning and their actual learning achievements. You cannot identify a learning disabled adult just by looking.

### Occurrence Of Disability

Learning disabilities can occur at any of the stages in the learning process--receiving stimuli in the sensory organs, transmitting stimuli through the neurals to the brain, internalizing stimuli in the brain, transmitting stimuli through the neurals to the organs of communication, and using the stimuli in these organs. The following figure shows the five processes of the cognitive system.

Receiving - Transmitting in - Internalizing - Transmitting Out - Performing

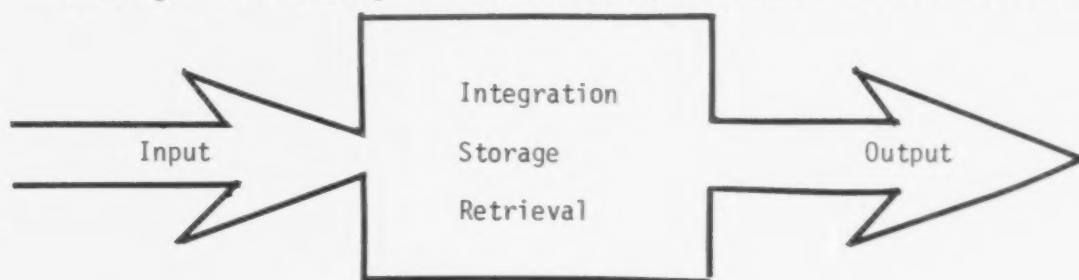


Figure 1. The Processes and Flow of the Cognitive System

When something interferes with the orderly procedure of energy through this system, learning is stymied; any of the factors of learning can be rendered inefficient or inoperative:

perception

attention span

metacognition (knowing how you learn)

attaching meaning to symbols

memory

reasoning

muscle articulation including vocal

Much of the information on the learning process and the learning disabilities of adults has evolved from study and research of the learning process and of learning disabilities in children. Understanding the needs of learning disabled adults requires the addition of assumptions from contemporary philosophical and psychological theories. Identifying the adult with learning disability must frequently be inferred as much from social behavior as from academic activity.

#### The Complexity of Adjustment

Emphasis on the learning disabled is a relatively recent phenomena that developed from the programs for exceptional children of the 1950's and when educational institutions added services for learning disabled children in the late 1960's and early 1970's. Children were served but subsequent institutions did not continue to focus attention and resources on the problems that faced these children and youth as they grew into adulthood. Indeed, the life problems of the learning disabled person in the adult work world have long been neglected.

A number of learning disabled youngsters through self-determination, perseverance, and the support of families and friends left the adolescent years to become well-adjusted members of the working world. A small percentage of these learning disabled students even made their way into colleges and universities, however, only a limited number completed degrees. Very few colleges were sensitive to the needs of learning disabled college students; thus, many of them failed or withdrew after one semester or a year (Vogel, 1981). Most became learning disabled adult workers who were underemployed or inefficiently placed in job roles.

The prejudice of the working world and higher education indicated that the label "learning disabled" that guaranteed services for students in school worked against these young adults as they entered the working world. Roa Lynn (1979) reported that many learning disabled adults have been forced to feel like "con-artists" because of the double burden of not only having to do their work, but also of maintaining the image that they were working in the same way as everyone else.

Our social, economic, and political mores also are bewildering to the learning disabled individuals seeking to help themselves. Job search, consumer activities, intelligent voting, and many other adult performance tasks require academic effort. In addition, protection for these adults against discrimination in employment, consumerism, or educational opportunities is buried under a maze of laws and regulations requiring a sophistication and awareness of bureaucratic processes. Support for the learning disabled adults has been blocked continuously by prejudice and the red tape of modern society. The problem is not in the individual or groups of them but in a system blinded by ignorance and prejudice that has victimized many learn-

ing disabled adults. As William Smith (1976) stated: "It is the system that is to blame, and it is the system which must be changed." (P. 35).

Similarly in the work environment, the learning disabled adult must cope with the pluralisms of the production activity and the academic demands inherent in it. The working community does not accept the responsibility of providing basic academic skills and, in fact, does little to encourage and guide a worker into compensatory behavior necessary for survival on the job. It is the institutions of education and training that must accept the obligation of finding ways to encourage and teach ways to cope.

In all environments the learning disabled adult often feels alone and different. Whenever the threat of failure is likely to arise the reaction can be self-isolation or diversionary activity. At this point they require not less support but more. They need models to emulate and the experience of community with them. Yet as McDaniel observed (1969): "The behavioral incapacities and social rejection place the disabled in a subordinate position where many goals seem inaccessible". (p. 12).

The complex inter-relationship between a learning disabled adult and the demands of several complicated environments may ultimately require diagnosis and prescription from professionals who work with them. It takes special tools and skills to differentiate between the learning disabled and persons whose performance deficit derives from other causes, how their academic and social performances are related to their disability, and potential corrective instructional techniques. In the meantime, adult education teachers can be aware that a problem exists, and can work with each adult to find alternative procedures for learning that circumvent the disabled part of the cognitive process or to develop coping techniques.

Consider this description of an adult student:

BEN

Ben is a thirty-three-year-old male of normal intelligence and typical appearance. He fits in with the group and converses well both in and out of class. Despite years of remedial reading classes, Ben scores at fourth-grade level on standardized reading comprehension tests. Difficulties in remembering how specific words look and in discriminating between similar looking words also affect his spelling abilities. However, Ben's oral language skills and mathematical abilities are appropriate to his previous instruction and reflect his ability to gain from instruction.

The instructor can readily determine that--

Ben looks average and normal

Ben converses well

Ben functions adequately in a group

Ben has profited from instruction in mathematics and oral language.

Ben has not profited from reading instruction.

Is Ben learning disabled? Untrained instructors often have difficulty differentiating between the adult student with a disability and the student who exhibits similar problems because of low intelligence, emotional or social disfunction, or lack of motivation. To make an accurate diagnosis requires training in learning disabilities and in techniques for examining the various dimensions of Ben's social and academic

performances. Considering only the information given in this description of Ben, a trained instructor would probably say, "Ben does interact well in a group and can carry on a conversation and in that way functions well in a social situation. From his progress in mathematics we would not consider him low in intelligence. He is highly motivated since he has spent years in remedial reading instruction. His reading difficulties do seem to indicate very specific processing problems. Yes, Ben seems to be learning disabled."

Defects and deficiencies in the organs, nerves, or muscles used in the cognitive processes cannot be directly observed but they can be inferred from evidences of inefficiency or deficiency in the products of learning both academic and social. Understanding the cognitive process can alert a teacher to the evidences which are significant for identifying disability.

Unless the reason for not having learned previously is known adult education teachers should constantly be alert for and consciously observe all adult students for learning disability. Observations can occur during study and in social contacts, and through examination of the results or products of their learning, including post-learning behavior that may be compensatory. Observations are made both simultaneously and sequentially, and observations in each area should supplement and complement each other but, convincing evidence of disability is usually stronger and more easily identified in one of the areas. The case studies that follow in this section have been selected not only to show this dominance but also to emphasize the complex inter-relationship among areas of learning.

#### Cognitive Process Evidence

The cognitive processes include all of the mental processes by which "knowing" occurs. Together these comprise an individual's ability to extract information from the environment, to store the information, to relate new information to previous information, to use the information repeatedly, and to use it in new and different ways.

Breakdowns or deficits in one or more of the cognitive processes will adversely affect a person's ability to learn in the same way or at the same rate as others who have no deficit. Such deficits are the underlying reasons why some individuals have difficulty in one or more of the

processes and procedures of learning. They may not maintain attention, receive stimuli accurately (perception), remember (memory), attach meaning to symbols (symbolization), differentiate among and combine meanings (conceptualization), understand their learning behavior (metacognition). Each of these cognitive processes are briefly described, followed by three case studies which very generally depict the discrepancies in functioning and the underachievements observed in learning disabled adults.

Attention - The ability to focus awareness. This includes being alert to a stimulus about to be presented, being ready to respond, focusing on the appropriate stimuli, sustaining attention for adequate time periods, and then deciding on an answer or action (Smith, 1983).

Perception - A continuous process of analyzing relations, sequences, classes, categories, objects, and symbol systems (Reid & Hresko, 1981)

Memory - The storage of information. Information may be stored for brief periods of time before it is integrated or forgotten. This is usually referred to as short-term memory. Long-term memory refers to storage of information for longer periods of time.

Symbolization - The process by which meaning is attached to words, gestures, and symbols, and by which something is represented by something else.

Conceptualization - The integration of new information with previous information to form new relationships and knowledge structures.

Metacognition - Knowing about knowing. This is the awareness of how one learns.'

Case #1. Peter is a thirty-year-old-male with low average intelligence. He demonstrates a severe attentional deficit for verbal and non-verbal information, failing to focus long on relevant attributes or to sustain attention through learning a task. Peter often fails to understand the multiple meaning of words, the need to supply more information in a conversation, and the subtlety behind verbal humor. He has a very difficult time seeing the relationships between concepts like opposites or synonyms. However, his greatest difficulty is with interpreting non-verbal information like body language and signs.

Apparent learning disabilities exist in the cognitive processes:

Attention  
Symbolization  
Conceptualization

Apparent underachievements exist in these problem areas:

Academic problems

Mathematics  
Reading  
Written language

Vocational problems:

Understanding directions  
Reading diagrams, maps, schematics  
Learning information quickly

Social-emotional problems:

Personal interactions

Case #2. Mary is 27 years old and of average intelligence. Her understanding of language both auditory and visual is average. She has no difficulty discriminating between similar sounding words or sounds. Her oral language syntax and formulation are average. Mary does, however, demonstrate difficulty remembering what she hears and finding words to express herself. Many times she cannot recall the specific words she needs to complete a thought; her speech, therefore, is full of fillers and functional definitions. Mary's difficulty is in the retrieval or manipulation of

language symbols, not in receiving or understanding language.

Apparent learning disabilities exist in the cognitive processes:

Memory  
Retrieval aspect of symbolization  
or conceptualization

Apparent underachievements exist in these problem areas:

|                            |                                                                       |
|----------------------------|-----------------------------------------------------------------------|
| Academic problems:         | Producing written language<br>Orally expressing herself               |
| Vocational problems:       | Quickly responding to and<br>remembering oral instructions            |
| Social/emotional problems: | Remembering what someone says<br>Keeping the rhythm of a conversation |

Case #3. Robert, age 21, was referred to LD specialists by the training instructor in the company where he worked because he "dragged out sounds" as he read and had trouble understanding what he heard, including both literal and inferential information. Robert has a difficult time providing a concrete meaning for double function words, (such as the word blue, for example) and when told the more abstract meaning (feeling blue), is usually unable to explain any relationship between meanings.

Robert reads in a laborious, word-by-word fashion. The strategy Robert uses to decode words is to guess at the word solely on the basis of the first sound, rarely using semantic (meaning) or syntactic (order) context clues. Robert also demonstrated decoding difficulties related to morphological-orthographic rules.

Robert has a very difficult time remembering what he hears. He appears to utilize few if any strategies to help him remember information.

Apparent learning disabilities exist in the cognitive processes:

Memory  
Conceptualization  
Metacognition

Apparent underachievements exist in these problem areas:

|                            |                                                                                |
|----------------------------|--------------------------------------------------------------------------------|
| Academic problems:         | Reading<br>Writing                                                             |
| Vocational problems:       | Reading written instructions<br>Listening to directions<br>Writing information |
| Social/emotional problems: | Remembering conversations<br>Understanding abstract social situations          |

In summary, to be considered learning disabled, the adult must:

- I. show a discrepancy between his/her potential (cognitive ability) and achievement.
- II. demonstrate a deficit in one or more cognitive processes.
  - A. Metacognition (cognitive strategies)
  - B. Conceptualization
  - C. Symbolization
  - D. Memory
  - E. Perception
  - F. Attention
- III. possess the learning disability as the primary handicapping condition.
- IV. be capable of functioning in the average range of intellectual potential.

#### Academic And Behavioral Evidence

Although it takes clinical procedures and a "learning disabilities professional" to establish the cognitive process with disability, adult

education teachers can strongly surmise that there is disability (rather than low intelligence or emotional block) through observation. Chiefly, these include a history of learning deficiencies and problems, noting behavior during learning or learning accomplishment that deviate from the normal, and identifying behavior in the academic, vocational, or social settings that seem to be compensatory.

Adults have had to live with their deficits for a long time whether their difficulties or problems in learning were few or many, they know a problem exists and have made some adjustment. An alert adult education teacher can identify these adjustments and help to further them as well as establish new adjustments. The following case studies illustrate observational results.

Case #4. Chris, 28, is a female of average intelligence, but she has several learning disabilities that especially affect her mathematics skills. She demonstrates mild to moderate problems in auditory comprehension, auditory memory for unrelated information, perceptual motor abilities, organizational skills, and the speed with which she processes visual information. Her memory skills for information without meaning are poor, but they improve on tasks where there is meaning. Difficulties in these areas have resulted in significant underachievement in reading comprehension, written language skills, and applied mathematical problem solving. Most obvious are the difficulties seen when dealing with arithmetic or mathematical tasks including understanding and using math processes, excessive and inappropriate use of mnemonic devices, avoidance and abandoning mathematic tasks, and making disparaging comments on its utility or necessity.

Chris seems to have a poor self-concept, possibly due to past failures. She has trouble reaching the unrealistic goals that she sets for herself;

therefore, her poor view of herself is reinforced. She may be feeling guilty or ashamed about not meeting perceived expectations. There are indications that these feelings are masked by a certain amount of defensiveness and may be negatively affecting Chris's motivation level.

Case #5. Jane, 18, is of average intelligence with moderate auditory expressive and severe visual expressive and visual memory deficits, all affecting her written language. Her oral language skills cause her no difficulty in acquiring receptive language; she has no difficulties with auditory verbal discrimination, auditory comprehension, or auditory memory. Her oral language syntax and formulation are average. However, she demonstrates moderate word finding difficulties.

Visual memory for verbal stimulus causes Jane significant difficulty in spelling. Because of weaknesses in visual memory and visual verbal expression, Jane's written language is marked by word ending omissions, word omissions and substitutions, and poor use of cohesive ties. Her written language syntax and organization are significantly below her strong oral language ability.

Case #6. Fred, 30, has normal intelligence but a learning disability affecting reading. His greatest difficulties appear to be in visually discriminating between verbal information (letters and word) and remembering word configurations (visual memory). However, his visual memory for non-verbal information (pictures or diagrams) is within the average range. Fred's understanding (receptive) and expressive language skills are intact. If Fred can decode the words, he can comprehend the meaning. Fred exhibits no attentional deficits, inhibition, or hyperactivity.

Case #7. Mark has a serious perceptual motor deficit. Both his fine and gross motor skills are significantly below average. He demonstrates great difficulty with laterality, directionality, eye/hand coordination, and generally moving his body in space. He appears to be a very clumsy individual; therefore, he receives a considerable amount of ridicule at work and with his friends.

Mark's behavior in social situations is frequently robust and interferes with his desires to participate in sports and dancing. In the academic situation his handwriting is poor and becomes progressively worse even in short writing tasks; in arithmetic, the numbers are poorly formed and almost always horizontally and vertically out of alignment. At work Mark relishes tasks of strength but loses patience when confronted with tasks requiring concentration and accuracy. Following directions, reading maps and schematics, and understanding spatial concepts presents difficulty.

## LEARNING DISABILITIES IN LITERATURE

Literature and research has identified all of the following learning and behavior deficiencies as evidence of learning disability in adults. However, the existence of one or several of these characteristics does not necessarily indicate disability (this requires professional clinical expertise) but several or a multiplicity of these characteristics exhibited by an individual should be an attention-getting red flag to the adult education teacher.

ORAL LANGUAGE

- Difficulty in listening
- Auditory discrimination problems
- Auditory memory problems
- Auditory sequencing problems
- Formulating and expressing ideas into words
- Problem organizing ideas
- Difficulty selecting relevant information
- Breaking down words into sounds
- Blending sounds together to form a word
- Understanding the meaning of figurative language
- Over-use of concrete language
- Difficulty recalling specific words (word finding)
- Utilizing language inappropriate for specific social situations

THINKING AND REASONING

- Inability to plan or set goals
- Difficulty in selecting from alternatives
- Mislead by irrelevant information
- Difficulty organizing ideas

Poor abstract reasoning skills  
Poor problem solving skills  
Poor cause/effect reasoning  
Problems in identifying main ideas  
Divergent problem solving

#### INTERPERSONAL RELATIONSHIPS

Quickly yields to pressure from peers  
Feelings of inadequacy  
Immaturity  
Passive active aggression  
Poor self-concept  
Inappropriate comments  
Difficulty using personal space  
Problems anticipating the behavior of others  
Difficulty generalizing experiences  
Impulsive decision making  
Inflexibility

#### BEHAVIORS

Hyperactivity  
Short attention span  
Distractibility  
Independence/dependence confusion  
Egocentric

#### READING

Perceptual confusion  
Reading rate problems  
Decoding problems

Comprehension problems

Visual discrimination problems

Processes verbal information slowly

#### MATHEMATICS

Problems with part-whole relationships

Applying math concepts in word problems

Difficulty learning the sequence of steps to solve a problem

Difficulty solving math problems presented orally

Difficulty performing calculations

Difficulty understanding time concepts

Difficulty performing decimals and percentage problems

#### WRITTEN LANGUAGE

Handwriting problems (often prints)

Spelling problems

Visual memory problems

Problems organizing writing

Lack of punctuation and capitalization

The Association of Children and Adults with Learning Disabilities (ACLD) adopted the following definition of learning disabilities in October, 1984. It includes a rationale for each of the terms that were accepted. Together they provide an appropriate and practical definition for identifying, understanding, and dealing with the adult population.

#### THE DEFINITION

Specific Learning Disabilities is a chronic condition of presumed neurological origin which selectively interferes with the development, integration, and/or demonstration of verbal and/or non-verbal abilities.

Specific Learning Disabilities exist as a distinct handicapping condition in the presence of average to superior intelligence, adequate sensory and motor systems, and adequate learning opportunities. The condition varies in its manifestations and in degree of severity.

Throughout life the condition can affect self-esteem, education, vocation, socialization, and/or daily living activities.

#### RATIONALE FOR THE DEFINITION

**SPECIFIC LEARNING DISABILITIES:** Specific Learning Disabilities (SLD) was selected to emphasize the fact that this condition has multiple manifestations but is not one of a generalized nature. Also, this is the term used in the Education of the Handicapped Act, the Education of All Handicapped Children Act, and the Rehabilitation Act of 1973, Section 504.

CONDITION: was made synonymous with SLD because it is a state of being. It is not merely a term nor does it affect only children, which some definitions suggest. For the first time the condition, not the population, is defined.

CHRONIC: was used to modify condition to define its persistence in spite of the apparent waxing and waning of its manifestations.

NEUROLOGICAL ORIGIN: was inserted because early and recent authors of definitions have agreed to a central nervous system basis.

PRESUMED: was used to modify "neurological origin" since there are not yet tools to determine origin definitively.

INTERFERES: is the active verb because the condition does not necessarily destroy or delete function but may variously impair, alter, or redirect functions.

SELECTIVITY: was used to qualify the global concept of "interferes" because the condition differentially affects abilities while leaving others unaffected.

DEVELOPMENT, INTEGRATION, and/or DEMONSTRATION: this phrase was selected to denote the disruptions the condition creates in developing and using intrinsic abilities.

VERBAL OR NON-VERBAL ABILITIES: were chosen as inclusive terms to emphasize not only receptive and expressive language problems, but also the conceptual and thinking difficulties, the integrating problems, and motoric problems. This approach is more descriptive and desirable than the person's approach focusing primarily on verbal and academic manifestations.

DISTINCT: signifies that SLD is separate and different from any other handicap and that any required interventions must be uniquely designed.

HANDICAPPING: was used because the condition meets the definitional criteria contained in Section 504 of the Rehabilitation Act of 1973 and to emphasize possible eligibility for assistance under all federal legislation for persons with handicaps.

INTELLIGENCE: was inserted to avoid quantitative measurement terminology and to prevent direct translation into "I.Q. scores".

AVERAGE TO SUPERIOR: was included because the condition of Specific Learning Disabilities selectively interferes with abilities throughout the range of intelligence. Because of this selective interference, composite scores are inappropriate for use with SLD. Also, it is recognized that appropriate interventions can raise measured scores while a lack of or inappropriate interventions can lead to deterioration, not only of measured scores, but even of the individual.

AVERAGE TO SUPERIOR INTELLIGENCE: was used to emphasize its co-existence and the potential need for services even among those with very high potential. The condition is not one of generalized low-learning ability.

ADEQUATE SENSORY AND MOTOR SYSTEMS: was included to clarify the distinction of the condition from other known sensory and motor deficits.

ADEQUATE LEARNING OPPORTUNITIES: was selected to emphasize that the condition does not arise from a lack of exposure to life experiences and/or education typical to the community for the same age group.

VARIES IN ITS MANIFESTATIONS: was selected to emphasize that SLD does not equate with one or more functional deficits, e.g. reading disability, but is demonstrated in many signs and symptoms.

VARIES: was used to denote its apparent changes in manifestation within the individual and to state that it is not identical across occurrences.

DEGREE OF SEVERITY: was inserted to clarify further the variance of the condition among the population and the variance in the extent to which it interferes with major life skills.

THROUGHOUT LIFE: was used to emphasize that the condition persists into and throughout adulthood and it begins the sentence to connote its early presence.

AFFECT: was the preferred verb rather than disrupts, damages, impairs, interrupts, etc., because the condition may depreciate the function of some abilities while, simultaneously, the person may enhance other abilities through compensation.

CAN: was used to modify the verb "act" to allow for differential effects on the areas to follow.

SELF-ESTEEM, EDUCATION VOCATION, SOCIALIZATION, and/or DAILY LIVING: were used to establish the potential influences of the condition not only on school achievement but also on areas of life such as family life, community living, selection of competitive employment, or even on learning how to drive a car.

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- Agnosia - The inability to recognize or interpret sensory information even though the sense organ involved is intact.
- Aphasia - Loss of language. This involves inability to deal with symbols. It can affect ability to interpret or use spoken, read, or written language. When a person is unable to comprehend language that is spoken to him, he is said to have receptive aphasia. When he himself is unable to use language as a medium of expression, he is said to have expressive aphasia.
- Apraxia - Apraxia involves inability to evoke language on a voluntary basis. The person physically knows what he wants to say, but is unable to transduce this message into his motor system. This type of apraxis is known as verbal or oral apraxia. Motor apraxia occurs when a person intends to use written language or other means of written or motor expression, but is unable to translate his message into a voluntary motor pattern (see ataxia).
- Ataxia - Non paralytic motor involvements, motor activity cannot be coordinated normally.
- Articulation - This term refers to the enunciation of the individual speech sounds of our language.
- Attention span - This refers to ability to attend to a stimulus. Persons with learning disabilities typically have short attention spans, which means that the amount of time they are able to attend to or focus on a specific stimulus is very limited.
- Auditory acuity - Refers to the sensation level of hearing. It denotes how well a person with hearing capability is able to hear an auditory stimulus in terms of decibel level. (Deafness is classified as a separate handicap).

Auditory discrimination - Refers to the ability of a person to hear sounds accurately and to differentiate speech sounds in their pitch and frequency characteristics.

Auditory sequential memory - Is the ability to produce or retain auditory units (whether digits, letters, or words) in sequence.

Automaticity - Refers to overlearn.

Behavior modification - A current technique of behavior control applied especially to learning situations. The task to be learned is set up in such way as to generate a correct response and is immediately rewarding. The emphasis is on positive reinforcement of learning.

Conceptualization - The highest level of learning that man achieves. It assumes that the individual has developed sensation, perception, memory, and symbolization or the use of language. Utilizing these facilities, he goes on to form concepts. Conceptualization includes such processes as categorical reasoning and generalization.

Diagnostic teaching - The day-by-day teaching or evaluation session in which the teacher or therapist on an informal basis determines through observation and follow-up a person's specific learning strengths and weaknesses. The teacher looks not only at what the person does, but how it is done and why.

Directionality - Is the ability to project one's perception of "left" and "right" onto objects or other people within the environment. Directionality also implies that a person can perceive such other directional characteristics as "up", "down," etc.

Distractibility - A person who is distractible pays attention to insignificant stimuli rather than to what is relevant at the time. He may be auditorily distractible, in which case auditory stimuli attract his attention easily, or he may be overly concerned with visual stimuli. Distractibility is frequently related to deficits in figure-ground perception and also attention span. Self-generated mental stimuli can also be distractable.

Dysarthria - A severe speech impediment in which the defect in articulation is usually caused by central or peripheral nerve damage. (This can be classified as a separate handicap).

Dysgraphia - This is a disorder of written language in which the person is unable to transduce visual to motor patterns. It is also referred to as a specific writing disability.

Dyslexia - A specific disorder of reading. Even though the person has a normal I.Q., he is unable to learn to read according to his mental and chronological age in spite of emotional, intellectual, and environmental intactness.

Echolalia - The meaningless repetition of speech sounds and words and is a normal developmental process in a young child's learning of language. It is considered pathological in older children and adults. Echolalic language or the forced repetition of what has been heard is meaningless speech on the part of the user. It reflects a deficit in receptive understanding of language.

EEG - The abbreviation for the electroencephalogram. A brain wave test which has been used in the past to determine neurological dysfunction. It is helpful in locating the brain site of seizures

and epilepsy. Its value in determining other types of neurological dysfunction is questionable.

Fitzgerald key - A device used in teaching the deaf the structure of our language. It can also be used with language-disordered persons who have difficulty with sentence syntax and structure.

Formal diagnosis - Formal diagnosis consists of evaluation by a team of professionals who utilize various psychological instruments to determine a person's learning strengths and weaknesses and overall adjustment.

Handedness - Refers to the person's preferred use of either his left or right hand.

Hyperactivity - In simple terms this means that the person is overly active. He seems to be nervous and in perpetual motion. It is very difficult for this type of person to settle down to a routine or concentrate on a single task for very long. This person is distracting to himself as well as others.

Informal diagnosis - This procedure is akin to diagnostic teaching whereby the instructor continuously evaluates the student's progress and needs, making such changes as necessary in techniques, materials, and environment.

Intelligence - A person's native potential for learning. Intelligence is measured by the psychologist through a variety of instruments. It is important to remember that man has two types of intelligence, verbal and non-verbal. For a person with a language disorder, a verbal test of intelligence will give a poor estimate of his overall potential for learning. In this case a non-verbal or performance type of test would be indicated.

Inner language - The ability of a person to use the symbols in his environment, either those he hears or sees, to structure his own world of thinking. It is difficult to evaluate the inner language of a person or the language he uses for thinking. However, to some extent, it can be observed. Look for how well a person's actions are integrated and how well a person interacts with his environment.

Inversion - A term used to describe reading errors in which the directionality of letters is confused. In this instance letters are confused in regard to the directional positions of "up" and "down". The student may read (u) for (n) or (t) for (f) or (w) for (m).

Kinesthesia - The perception or feeling of movement.

Language - The utilization of symbols for the purpose of communication.

Language is of three types: Spoken, reading, or written.

Laterality - Laterality refers to a person's differentiation of the two sides of his body.

Modality - Refers to one of the sensory processes through which learning occurs, either vision, audition, kinesthesia, or tactition.

Morphology - Commonly referred to as grammar. It deals with the smallest lexical units of our language (morphemes), which are words, roots, affixes, or inflectional endings.

Multisensory - A term used to describe learning experiences in which several sensory modalities are used to reinforce one another.

Neurological - A term which refers to the central nervous system, which includes the cerebral cortex and the underlying brain structures.

Neurological dysfunction - Indicates that something is not "working right" in the brain, consequently causing a disturbance in the learning process.

Overlearn - To "overlearn" something is to learn it so well that one's responses become "automatic." For example, we overlearn to drive a car, play the piano, type, etc. Many of the associations in reading are also overlearned and allow us to read easily and "automatically." Consequently, we can concentrate on the content of what we are reading rather than on the decoding process itself.

Overloading - In learning this occurs when the brain is required to make more discriminations or associations at any one time than it is capable of doing. A person with neurological impairment generally has lower tolerance limits for the processing of information.

Perception - The level of learning experience that requires a person to interpret the sensory information he receives.

Perseveration - The inability of a person to restructure his thinking quickly. The person with perseveration persists with a response that is no longer appropriate. Perseveration may occur in the verbal or language area, which is called verbal perseveration. It may also occur as a motor function.

Psychological evaluation - Includes diagnostic instruments that measure a person's native intelligence for learning, perceptual tests, and apperception tests of emotional maturity.

Reauditorization - Refers to the ability of the person to recall the auditory image of a sound or a word.

Reversal - The term is used to describe reading errors in which the directionality of the word letter is perceived in "reversed" order. The person is said to "see" letters or words "backwards." (p) is read for (q), or (b) is read for (d). (Was is read for (saw), and so forth.

Revisulization - Refers to a person's ability to recall the visual image of a letter, word, or picture.

Sensation - The lowest level of learning experience and refers to the activation of sensory-neural structures.

Sequentialization - The ability to order and structure events in a pre-designated sequence.

Social perception - Involves the recognition and perception of social interrelationships and structures.

Spatial orientation - Involves a person's ability to locate himself in a space world. It deals with such correlates as left, right, in, on, under, on top, etc.

Special learning disabilities - A term which refers to a disorder in the process of speech, language, reading, writing, or arithmetic. A person with a specific learning disability is assumed to have normal overall learning potential. However, he displays a deficit in one or more of the areas listed above.

Speech - The articulation of the sounds of our language for the purpose of communication.

Symbolization - The utilization of symbols by which various units of experience are represented by predesignated signs or symbols (words).

Syntax - Refers to the arrangement and relationship of components within a grammatical structure, such as the sentence.

Temporal relationships - These are basically relationships dealing with time. For example, they involve such concepts as before and after. The passage of time needs to be perceived in order for a person to understand the calendar with its terminology of yesterday, today and tomorrow. Temporal relationships are frequently difficult for the SLD person to grasp.

**Titles in this series:**

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**Assessment and Remediation of Written Language**  
**Assessment and Remediation of Reading**  
**Assessment and Remediation of Mathematics**  
**Occupational and Career Information**